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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,842	08/22/2006	Wilfried Braje	ABB10043P0013US	4358
32116 7590 03/24/2008 WOOD, PHILLIPS, KATZ, CLARK & MORTIMER 500 W. MADISON STREET SUITE 3800 CHICAGO, IL 60661			EXAMINER BERNHARDT, EMILY B	
			ART UNIT 1624	PAPER NUMBER
			MAIL DATE 03/24/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,842	BRAJE ET AL.	
	Examiner	Art Unit	
	Emily Bernhardt	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/11/05 & 9/25/06</u> . | 6) <input type="checkbox"/> Other: ____. |

The disclosure is objected to because of the following informalities:

The parent history is incomplete as written. Mention of PCT application as a 371 should be followed by relationship of earlier US benefit case to the PCT. See MPEP 1302.04.

Appropriate correction is required.

Claims 1-20, and 23-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Nature of Q and Ar rings is not completely defined as only 2 atoms are positively recited as ring members. Thus the nature of remaining ring atoms is not clear. From the examples in the specification carbon atoms are remaining ring members . Note In re Wiggins 179 USPQ 421 regarding such terminology.

2. "Where appropriate..." appearing throughout the dependent claims is not clear as to what conditions the functional groups following this term can be present and when it is not appropriate. Is "optionally" really intended? For composition claim 23 one would need a carrier so "optionally" would not

make sense for this claim which requires at least 2 components. The phrase should be deleted.

3. In claim 12 and 20 the wording “R1 is different from hydrogen and methyl” is grammatically awkward. Does applicant mean “in which R1 is not hydrogen or methyl?”

4. Method claim 27 is of indeterminate scope as no particular disorder is ever recited. Such claim language reciting a particular mode of action(s) may read on diseases that are affected by dopamine binding in ways not yet understood. What distinguishes a mammal, the apparent host, in need of such treatment vs. one who is not in need? D3 receptors recited may be involved in all diseases so how can one be sure that any use of claim's 1 scope does not infringe these claims? Additionally, determining whether a given disease responds to D3 receptor agonists or antagonists would involve much experimentation since a negative response from one patient does not mean the drug isn't useful as no drug has 100% effectiveness. Thus what “success rate” determines if a particular compound is effective and how many patients (and dosage regimens) need to be tested? The test for determining compliance with 35 USC 112, par. two is whether applicants have clearly defined “their” invention **not** what may be

discovered by future research as this type of claim language clearly requires.

5. Claims 24-26 provides for the use of **compounds**, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

6. In main claim 1 there is extraneous text. See “Ar” definition, 5th line and also in claim 3 in the “Ar” definition, 4th line.

Claims 24-26 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 8 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the

claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 permits A2 as N which is not included within 6 from which 8 depends. In claim 19 phenyl is recited for Ar which is not included in claim 13.

Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for Q as pyridyl, pyrimidyl and Ar as phenyl and R2 as alkyl, does not reasonably provide enablement for the varying scope of azines permitted at both Q and Ar as well as fused piperazines at R1/R2 and at any pair of R2. For the latter, specification is silent as to the availability of necessary reactants needed to prepare such ring systems or if they are commercially available. Note In re Howarth 210 USPQ 689; Ex parte Moersch 104 USPQ 122 for the need to show starting material sources commensurate with the instant scope. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. There is no basis in the prior art for such a variety of rings, ring systems all known to be selective D3 receptor ligands. Compounds actually made and tested are much closer to each other than

to remaining scope exemplifying the rings at Q and Ar indicated above.

Only one example of a bicyclo ring, namely, the 2,5

diazabicyclo[2.2.1]heptane ring system has been made and tested vs. what

is claimed at R2/R1 or at R2's at any location. There is thus no reasonable

basis for assuming that the myriad of compounds embraced by the claims

will all share the same physiological properties since they are so

structurally dissimilar as to be chemically non-equivalent and no exemplary

test data has been provided for such a scope. Note In re Surrey 151

USPQ 724 regarding sufficiency of disclosure for a Markush group. Also

note the criteria for enablement as set out in In re Wands cited in MPEP

2164.01(a), August 2000 edition which such factors such as:

- 1) Breadth of the claims- the claims cover compounds easily in the millions as pointed out above;

- 2) Level of unpredictability in the art- the invention is pharmaceutical in nature as it involves binding to dopamine (D3) receptors. It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved" and physiological activity is generally considered to be unpredictable. See In re Fisher 166 USPQ 18.

3) Direction or guidance- as stated above the compounds made are not representative of the instant scope but represent only a small fraction of what is being claimed;

4) State of the prior art- The compounds are both fused and unfused piperazine derivatives attached at one end to azines which in turn are substituted with an aromatic sulfonyl group by way of an amino, oxy or carbon link. While such compounds are known as evident from the art applied below, they are directed to compounds used in screening for other type of receptors or as reagents and thus do not evidence the many structural permutations permitted in the instant scope are known for at least one use in the prior art much less for the instant uses;

5) Working examples- While test data has been presented it is too homogeneous in terms of structural variation and there is thus no clear evaluation of which functional groups out of the many claimed might affect potency to a large or small degree.

In view of the above considerations, this rejection is being applied.

Claims 26-28 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating schizophrenia and Parkinson's Disease, does not reasonably provide enablement for treating

any CNS disorder or kidney disorder. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Remaining uses embraced which from a reading of the specification include memory, cognitive, sleep, eating disorders to name just a few, are not remotely enabled based on what is currently known in the art for dopamine receptors in particular D3 receptors relied on herein. Such uses are not considered all treatable based simply on D3 receptor binding as evidenced by the references cited by applicants such as Schwartz, Dooley or Joyce.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Interchim Intermediates. The reference cited by applicants depicts a compound named therein which is embraced by the instant claim language. It appears to be part of a Chemical library used as synthetic reagents.

Claims 1-3,10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Willecomme (cited by applicants). The article describes compounds within the instant scope. See Table IV, egs. VII and IV in the 1st row of the reaction scheme.

Claims 1-3,10,11 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (WO'265). The WO publication cited by applicants is applied as of its international filing date which precedes applicants' earlier US filing date. It describes several compounds within the claims' scope as part of a library used for screening binding at various receptors such as neuropeptides. See compounds appended to the Chemical abstract provided by the examiner. It describes compounds within the instant scope when pyrazine is present corresponding to instant Q. It is recognized that applicants are claiming benefit of earlier US application which would antedate Jones, but descriptive support for entire

subject matter is not seen in earlier case. Compare scope of “Ar” substituents with that claimed herein and the claims do not otherwise comply with 35 USC 112, par.one for the reasons set forth in the above 112 rejection under par.one. Note *In re Scheiber* 199 USPQ 782; *In re Lukach* 169 USPQ 795; *In re Chu* 36 USPQ 2d 1089.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 7,320,979. Although the conflicting claims are not identical, they are not patentably distinct from each other because they embrace overlapping subject matter to a large degree. While having the same inventive entity as herein and disclosure as well, US'979 does not share a common parent with instant case.

Applicants'IDS filed 10/11/05 has been considered in part. The 2nd page contains improper citations. Note journal sources are not given. Some of these cites have been properly cited in the IDS of 9/25/06. Remaining references should be resubmitted in the format set forth in MPEP 609.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Bernhardt whose telephone number is 571-272-0664.

If attempts to reach the examiner by telephone are unsuccessful, the acting supervisor for AU 1624, James O. Wilson can be reached at 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Emily Bernhardt/
Primary Examiner, Art Unit
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